Conclusion: MBG underestimates MVO after an optimal revascularization in AMI compared to CMR. This study suggests the superior accuracy of delayed enhanced magnetic resonance (DEMR) over MBG for the assessment of myocardial reperfusion injury which is needed in clinical trials where the principal endpoint is the reduction of infarct size (IS) and MVO.

037

The relative contribution of the CYP2C19*2 polymorphism in the low responsiveness to clopidogrel in the VASP-02 study

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The CYP2C19*2 genetic variant is known to contribute to low responsiveness to clopidogrel treatment, leading to a higher rate of cardiovascular events. Systematic identification of the 2C19*2 carriers to predict the individual patient's response to clopidogrel is a matter of debate.

Data of the VASP-02 study comparing patients' responsiveness to 75 and 150 mg/day maintenance dose of clopidogrel (Aleil et al., J Am Coll Cardiol Intv 2008) were reanalyzed by determining the 2C19*2 carrier status of the patients. Platelet reactivity index (PRI) was determined using the VASP method. A PRI>69 % defines low responsiveness to clopidogrel.

In the 37 non responder patients, 42.4 % were 2C19*2 carriers versus 22.0 % in the responder patients (p=0.022). After multivariate analysis, 2C19*2 polymorphism and high body weight were two independent predictors of high PRI (odds ratio [95% confidence interval] 3.39 [1.06-10.84] p=0.039 and 3.14 [1.19-8.30] p=0.021) respectively. Increasing the maintenance dose of clopidogrel from 75 to 150 mg/day in non responder patients resulted in a significant decrease of PRI from 76.4±4.6 to 62.8±10.4 % (p<0.01) in 2C19*2 carriers and from 76.1±5.3 to 60.8±13.4 % (p<0.01) in non carriers. The mean decrease of PRI after doubling the dose was not significantly different between carriers and non carriers of the genetic variant (-13.6±9.3 and -15.3±11.8 % p=0.39, respectively).

CYP2C19*2 is an important determinant of the responsiveness to clopidogrel while other independent factors such as body weight also are involved. Hyporesponsiveness in 2C19*2 carriers can be easily overcome by doubling the maintenance dose of clopidogrel. Thus, combined functional pharmacodynamic monitoring and genetic determination of CYP profile should help improve patient's responsiveness to clopidogrel.

038

Glycoprotein IIbIIIa Inhibitors Improve Clinical Outcome after Coronary Stenting in Clopidogrel non Responders: a Prospective, Randomized Study

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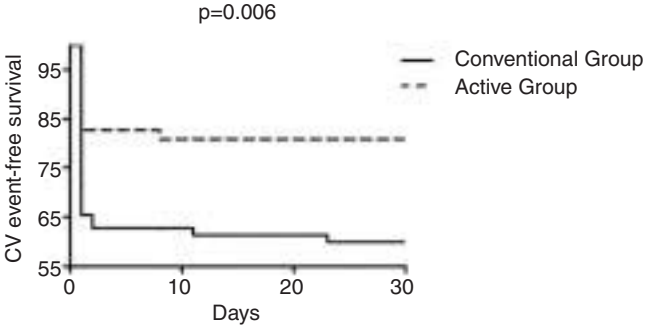
Introduction: Numerous biological studies have reported inter-individual variability in platelet response to clopidogrel with clinical relevance. High Post treatment platelet reactivity (ADP-induced aggregation >70%) has been proposed to define Non response to clopidogrel. We assessed in clopidogrel non responders undergoing elective percutaneous coronary intervention (PCI) the benefit of adjusted antiplatelet therapy with glycoprotein IIbIIIa (GPIIbIIIa) antagonist administration during PCI for one month clinical outcome.

Methods and Results: 149 clopidogrel non-responders referred for elective PCI were prospectively included and randomized to "conventional group" (n=75) or "active group" with GPIIbIIIa antagonist (n=74). All patients received 250 mg aspirin and 600 mg clopidogrel before PCI and platelet testing. The rate of CV events at one month was significantly lower in the "active group" than in the "conventional group": 19% (n=14) vs. 40% (n=30), p=0.006, [OR (95%CI): 2.8(1.4-6.0)]. No patient in either group had post procedural TIMI major bleeding or required transfusions.

Conclusion: The present study suggested benefit of tailored antiplatelet therapy during elective PCI with GPIIbIIIa antagonist for clopidogrel non responders without increased bleeding risk.



039

Slow Response to Clopidogrel Predicts Low Response

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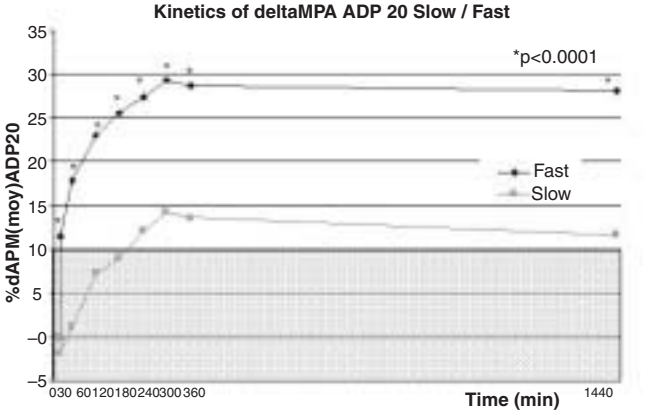
Objectives: To determine if the speed of response to clopidogrel loading predicts the final degree of response to clopidogrel.

Background: Fast inhibition of platelet aggregation is important in the setting of ACS and PCI, but its relation to the final degree of inhibition is not well established.

Methods: We performed a post-hoc analysis of ALBION, which included 103 NSTE-ACS patients randomised to 300, 600 or 900mg LD of clopidogrel. Early kinetic profiles of ADP 20µmol/l Maximal Platelet Aggregation (MPA) and deltaMPA (with baseline sample as reference) were studied, with 8 time points within the 24 hours following loading. Low response was defined as deltaMPA<10%



Relationship between onset of action and magnitude